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THE PROBLEM OF TULAREMIA RELAPSES

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The problem of the development of relapses in people who previously have had tularemia has not received wide coverage in medical literature. G. P. Rudnev writes that, "Besides the early relapses (after 3-4 years) there is denoted in the literature the possibility of relapses later (after several months and even periods exceeding a year)." Fouche noted the appearance of relapses for a period of 8 months to 2 years after the onset of the disease. Berinskaya observed relapses after 1-2 years. In our opinion, the inadequacy of data on relapses of tularemia is due largely to the lack of longer follow-up checking of those who have had the disease.

In this article we are citing the results of our investigations on patients who had tularemia from late 1945 through early 1946 and then had relapses during 1946. We are reporting only those cases in which there are sufficient data to support the diagnosis of the initial attack of tularemia (in-patient examination, laboratory analysis, and data of epidemiological inspections). In all we observed ten patients who had tularemia. All these cases were the bubonic or anginous-bubonic form of tularemia.

We cite a few short case histories:

1. Patient K, 45 years old, became ill on 15 December 1945. The onset of the disease was rapid, with a sudden rise of the temperature to 40 degrees. On 19 December, small bilateral cervical buboes were observed. Intracutaneous test with tularin was 0.5 x 0.5 centimeters. The agglutination reaction for the first week of the illness was negative. During nearly 2 months of hospitalization the buboes enlarged to the size of a tangerine and abscessed; they were then lanced. Three weeks after the lancing the secretion of pus stopped. The patient was discharged for work at the end of February 1946, but continued to feel weak for 2 months.

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On 25 October, after 8 months, he complained of pains in the throat and in the muscles of the arms and legs, and general asthenia. Temperature was 37 degrees. Diagnosis: angina catarrhalis. On 27 October his temperature was 38 degrees. Bilateral submaxillary buboes appeared. Diagnosis: tularemia (relapse). On 29 October the intracutaneous test was 2 x 2 centimeters. The agglutination reaction was strongly positive in a dilution of 1:100. On 31 October temperature was normal. The buboes had enlarged: the right side to the size of a hen's egg, the left to that of a walnut. The buboes were hard without soft points and were painful only when strongly squeezed. On 5 November the buboes were unchanged. The agglutination reaction was strongly positive in a dilution of 1:100.

Treatment: bandage with ichthyol ointment, and red prontosil internally. During November the patient felt very weak, but his temperature was normal. The buboes started to decrease in size and by mid-December were completely resolved.

2. Patient S, 21 years old, became ill 18 January 1946. In his home there were many mice, among which carriers were found. He reported to the polyclinic on the fifth day of the disease complaining of a high temperature, pain in the throat, and an enlargement of the submaxillary lymph nodes on the right side.

Temperature was 37 degrees and the throat was hyperemic. There was a bubo the size of a walnut under the right side of the jaw. Diagnosis: lymphadenitis. On 31 January an incision of the bubo was made. During February the patient's temperature was normal in the morning but rose to 38 degrees by evening. On the right cheek near the cochlea a bubo appeared the size of a woodnut with subsequent softening and spontaneous opening. The intracutaneous test was 3 x 4 centimeters. Diagnosis: tularemia. By May the fistula healed three times and reopened and then the emission of pus stopped. The bubo disappeared. Asthenia of the patient was noted until July.

On 23 November (after 6 months) the temperature suddenly rose to 38 degrees. There was pain on the right side of the neck, and a ringing in the right ear. Thereafter, the temperature in the morning was normal, but by evening rose to 37.8 to 38 degrees. On 29 November a small bubo appeared on the right cheek. The patient was sent to the tularemia station by the polyclinic.

On 3 December his throat was normal. A star-shaped scar had healed on the skin under the right side of the lower jaw. There was also a scar on the right cheek. In addition, there was a hard painful bubo, the size of a bean, on the cheek at the level of the external auditory canal. Intracutaneous test was 2.5 x 2.5 centimeters. Agglutination reaction was positive in a dilution of 1:200. Diagnosis: tularemia (relapse).

Treatment: ichtyyol in the region of the bubo; internally, red prontosil. Complete resolution of the bubo without abscessing by the end of December 1946.

3. Patient P, 23 years old, an inhabitant of village P, became sick in March 1946. At that time in the village there were patients with buboes, two of them in the patient's family. The disease struck suddenly, the temperature rose to 38.5 degrees, and swallowing was painful. On the third day buboes were found on the neck under the lower jaw on both sides. A bubo also appeared on the internal angle of the right eye socket. An intracutaneous test with tularin was positive. Diagnosis: tularemia. The temperature after 2 weeks returned to normal, and the bubo started to decrease in size and completely disappeared in May 1946.

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On 28 August, after 3½ months, the temperature suddenly rose to 39 degrees. After a time the temperature was normal in the morning but rose by evening. There were severe headaches all the time. After 10 days the temperature stayed normal, but buboes appeared and started to grow in the same places as in March, but this time they were larger. The patient was treated in the polyclinic for more than a month. On 5 October symmetrically placed bilaterial submaxillary buboes the size of a hen's egg were observed. In the region of the bridge of the nose and the interior angle of the right eye socket, there was a bubo the size of a plum and there was hyperemia of the skin in this section. The intracutaneous test was 0.5 x 0.5 centimeters. The agglutination reaction was positive in a dilution of 1:100.

4. Patient Sh, 38 years old, became sick at the end of December 1945. At that time in his village mortality of mice and cats was detected, and among the villagers there were tularemia patients. Onset of the illness was rapid. The temperature rose suddenly, and he began to notice a pain in the throat. After 5 days a bubo appeared on the right side under the lower jaw. Diagnosis: tularemia (anginous-bubonic form). Hospitalized for a month. The bubo was resolved.

At the end of October 1946, after 9 months, a small hard spot appeared under the lower right jaw in the same place as in December 1945, and after that a bubo appeared which started to grow rapidly. Temperature was normal.

On 10 October there was no change in the throat. There was a dense and insensitive bubo on the right side under the lower jaw the size of a walnut. The intracutaneous test was 1 x 1 centimeters. The agglutination reaction was positive in a dilution of 1:400.

In October the bubo continued to grow; it reached the size of a hen's egg, and developed a softened zone. In November the temperature rose in the evening to 38 degrees. In mid-November spontaneous opening of the bubo occurred. In December the fistula closed again after a month. The patient was unable to work. Severe asthenia, headaches, and perspiration of the legs were noted.

5. Patient K, 53 years old, became sick in February 1946. In the sovkhoz where he worked there were cases of tularemia. The temperature rose rapidly to 40 degrees, and he began to have headaches and pains in the throat and muscles. After 1½ weeks a submaxillary bubo appeared on the right side. Diagnosis: tularemia (anginous-bubonic form). After 1½ months the bubo was resolved.

On 10 October, after 6 months, his throat became sore and his temperature rose to 39 degrees. He suffered headaches and loss of appetite. After 2 days he began to feel pain at the point where the bubo had been and then the bubo formed again and began to grow. The increase in temperature lasted for only 2 weeks. He continued to feel very weak.

On 2 November there was some hyperemia of the throat. The bubo was hard, the size of a walnut and somewhat painful. The intracutaneous test was 3 x 4 centimeters. The agglutination reaction was strongly positive in dilutions of 1:100. Diagnosis: tularemia (relapse). On 13 November there was severe asthenia and the legs perspired. The bubo was reduced. The repeated agglutination reaction was strongly positive in dilutions of 1:100. Treatment: ichthyol bandage; internally, red prontosil. In December the bubo was reduced to the size of a woodnut. Early in February pain occurred in the throat again and the temperature rose to 38 degrees. The bubo grew to the size of a hen's egg. Symmetrical to it on the left side under the lower jaw, there was a new bubo the size of a plum. Diagnosis: relapse of tularemia. The bubo on the left resolved and the one on the right began to grow smaller. For several months the patient lost considerable weight, and noticed progressive asthenia, periodic shooting pain in the region of the heart, and an appreciable reduction or working ability. On 30 March the bubo on the right side was indolent and the size of a plum.

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The relapses of tularemia usually appeared 6-7 months after (recovery of the buboes) but in some cases we noted them earlier, after 3½ months, and later, after 11 months. In one patient we observed two relapses during a year. All relapses were either bubonic or, more often, anginous-bubonic forms of tularemia.

As a rule, the buboes reappeared in the same places as in the initial illnesses, but also occurred in new sections.

In some cases the diagnosis was for catarrhal disease. The possibility of reinfection was nullified by epidemiological data. The majority of the cases of relapse investigated by us involved patients from one population center and its surrounding villages.

In the majority of cases the relapses started quickly without preliminary symptoms. Sudden rise in temperature and symptoms of angina were observed. The period of fever lasted 5-14 days. The buboes appeared on the third to the tenth day. We did not notice any special features in the development of the buboes in contrast to the original process. It should be noted that in the investigated group, the buboes in the relapses were larger than those in the original illnesses. In all cases, development of the buboes was completely reversed and in only one case was there suppuration of the bubo.

The above data enable us to assume the possibility of a greater number of tularemia relapses than had been thought to occur, and demonstrate the necessity of more extensive treatment of this problem in the future.

A case of relapse which we are investigating at the present is also very interesting.

Patient L, 43 years old. In the latter part of March 1942, his temperature rose suddenly to 40 degrees. There were pains in his throat and muscles, and he had a severe headache. A diagnosis of angina was made. After 4 days his temperature dropped to 38 degrees, and later to 37.8 to 38 degrees. At the end of the third week he began to have difficulty in breathing. Our diagnosis of tularemia was supported by serological tests. He was hospitalized for nearly a month. Temperature during this time stayed normal, and the pain in the throat disappeared. There were no buboes.

In the first part of April 1947, without any general symptoms (temperature was normal), a bubo appeared on the left side of the neck, and began to grow until it reached the size of an apple. Treatment with quartz showed no results.

On 29 May an indolent bubo the size of a tangerine appeared on the left side behind and below the ear in the region of the sternocleidomastoid muscle. The skin in this region was pigmented and slightly exfoliated. On 30 May an intracutaneous test was 2 x 2 centimeters after 24 hours. After 48 hours the zone of the infiltrate had extended to 4 x 5 centimeters. On 31 May the agglutination reaction was positive in a dilution of 1:400.

In this case the patient was afflicted with the generalized form of tularemia for 5 years before the appearance of the bubo. The possibility of reinfection was not supported by epidemiological data and the clinical picture of the disease. Apparently in this case it was retarded relapse of tularemia, which is very rarely found.

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